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doing one kind of work compared to another facility doing a different kind of work?

Q Let's go to 3018. I want to pull up the OSHA regulation. This is 29 CFR Section 1926.1101.

THE COURT: Mr. Mullady, I apologize. I didn't get the exhibit number.

MR. MULLADY: It's ACC/FCR 3018.

THE COURT: Thank you.

Q Okay, this is the OSHA regulation. Can we explode it a little bit so it's readable. Okay, 1926.1101 construction at the top here.

THE COURT: This is the new one?

MR. MULLADY: Yes.

Q Construction, alteration, repair, maintenance et cetera. I want to go down and refer you to the section Appendix A OSHA reference method mandatory. This mandatory appendix specifies the procedure for analyzing air samples for asbestos and specifies quality control procedures that must be implemented by laboratories performing the analysis. The sampling in analytical methods described below represent the elements of the available monitoring methods such as Appendix B of this regulation. The most current version of the OSHA method id-160 or the most current version of the NIOSH method 7400. All employers who are required to conduct air monitoring under Paragraph F of the standard are required to utilize analytical

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laboratories that use this procedure or an equivalent method for collecting and analyzing samples. Did I read that correctly?

A Yes, you did.

Q Now these options listed here, Appendix B of OSHA, Appendix B OSHA method id-160 and NIOSH method 7400 are all PCM methods, aren't they?

A I am not an expert on OSHA methods so I can't tell you exactly the numbers but I do know that in mixed environment following the logic that I've just described that OSHA makes a provision and I believe it's 7204 for conversion when you are in these mixed environments. So I don't know. You can read me all of the OSHA regulations but it's not exactly my field.

Q I understand and I understand that --

A I do know the logic and I do know that OSHA has the same provisions as EPA does. The same logic because it only makes sense.

Q Let's go to the third page of this document. A great deal of experience is required to routinely and correctly perform differential counting. It is discouraged unless it is legally necessary. Do you see that?

A Yes, I see that.

Q What is your understanding of what is meant by differential counting?

A I think that for you to give me one sentence at a time

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from OSHA regulations isn't helpful. Because it would have to be read in context. Because I know the logic that OSHA uses. I know the logic that EPA uses and to read me one sentence at a time I think can be very misleading.

Q Well let's -- and I don't want to mislead and I will read more because -- and maybe that's necessary to put this in context. At the top of this page it reads as follows. "As previously mentioned in Section 1.3 PCM does not provide positive confirmation of asbestos fibers. Alternate differential counting techniques should be used if discrimination is desirable. Differential counting may include primary discrimination based on morphology, polarized light analysis fibers or modification of PCM data by scanning electron or transmission electron microscopy."

I'll stop there for a second. Transmission electron microscopy is also known as TEM, correct?

A Correct.

Q Then it goes on to say, the regulation does, a great deal of experience is required to routinely and correctly perform differential counting. It is discouraged unless it is legally necessary. Then only if a fiber is obviously not asbestos should it be excluded from the count. Further discussion of this technique can be found in reference 8.10. That is OSHA's position, correct?

A I would not characterize this as the totality of OSHA's

position because there is something wrong here that is discouraged unless it is legally necessary. I know that -- I know the logic that OSHA uses and there is something wrong. I'm not seeing the entire regulation. I don't know about the date. But I do know that there is the same logic at OSHA as there is at EPA, and that is when you are in a mixed environment you do need, and when you do need to do risk assessment work and you do need to know if you are counting asbestos fibers they need to be converted to PCME.

Q Thank you.

MR. MULLADY: I'll pass the witness.

THE COURT: Pardon me, Mr. Mullady. I'd like to ask the witness a question based on the OSHA regulation. I know Dr. Anderson, you don't confess to be an expert in the OSHA regulations. I understand that, but is the policy not consistent with the EPA policy that you are looking for the maximum possible counts so that you can ensure public health?

DR. ANDERSON: Yes, but if it's not asbestos fibers there is a provision made for using the TEM to find out if you are dealing with an asbestos fiber or if you are dealing -- PCM can just count all kinds of fibers beside a road when people are doing roadwork and there can be virtually none or none as far as asbestos counts are concerned.

So once you know the environment you are dealing with, then maybe you don't need to use it. But if you are

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going to try to identify what's asbestos it's essential to use some method that can identify if you are not in an asbestos rich environment. When you are in construction trades and transportation trades you can have a predominance of other kinds of fibers that would be seen by PCM.

THE COURT: All right, thank you. Mr. Mullady, do you have any follow up based on my question to the witness?

MR. MULLADY: No, I think to the extent we would have any more inquiry on that Mr. Finch is quite capable of following up.

THE COURT: All right, thank you. Mr. Finch.

MR. FINCH: Nathan Finch for the Asbestos Claimant's Committee.

CROSS EXAMINATION

BY MR. FINCH:

Q Just one follow up. Dr. Anderson, you are not a microscopy expert and you are not professing an expertise in that area, correct?

A That's correct. And I have looked through these microscopes and I do know what microscopists do.

Q You were asked some questions by Mr. Mullady about the review of the person injury questionnaires. Do you recall those questions, that Exponent did?

A Yes.

Q Okay, is it correct that unless someone either in their

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questionnaire or their questionnaire attachments said that they personally mixed or personally installed a Grace containing product they would have been put in the B, D or E categories?

A Not necessarily. You are saying if they didn't self-identify as an A or C.

Q In review of the backup materials you couldn't tell if they were in an A or C, then they would most likely have been in the B, D, or E category.

MR. BERNICK: Objection to the form of the question.

A No. I don't think so at all. I think we -- there was equal weight to end up in any one of the categories from the background review of the materials. It just depended on what was in the background review. There was no bias as to if they didn't self-identify then they weren't going to be -- to have an opportunity to be placed in an A category. That was not the approach.

Q I think you misunderstood my question. If someone said, let's say that they are an electrician and they didn't say that they personally mixed or personally installed a Grace containing product then they would be categorized as someone who is in a space or in a site or removed or cut the product a B, D or E, correct?

MR. BERNICK: Again, I'm objecting to that form of the question. You are saying that they identify a job title but they don't have anything in the backup that relates to or

talks about their actual, what other category they would fall into in terms of contact with asbestos?

DR. ANDERSON: Is that the question?

Q They identify themselves as an electrician and they don't have anything further.

A We did not classify anyone according to just a job title.

Q Okay. Could you turn to your July 31st expert report? It's in the notebook up there but it's ACC/FCR-432. Page 12. So if the PIQ or the attachments included the relevant key word such as mix or move, cut or install, you would put them in the appropriate category, correct?

A That's correct.

Q So if someone said that they mixed Grace Zonolite plaster, then they should have been put in the Category A, correct?

A If the rest of the materials, you know, supported that. I mean the whole file had to be read, but if that's what the file said in its totality that's where they would have been placed. And if they had had two job experiences. Let's say they were at some point at a site where something was being done but at another time they actually were a mixer and that's what the totality of the materials, the backup materials said, and if they also identified they had been exposed to a Grace product, they would have been elevated to the highest exposure category.

Q Okay, if there was insufficient information from which to tell whether they were an A through an E, then you

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characterized the people with insufficient information in the same ratio as if they did have information, correct?

A I think I, if I understand your question correctly, the answer is no. If they had information and they were clearly either an A or E, and we didn't know which one we put them in the A. We wouldn't have put them in insufficient and that is if the information showed other factors that they were exposed to a Grace product and the whole file supported the information not just some word that was not supported by other information in the file or there were contradictions in the file or that kind of thing. But no, we wouldn't have put them in insufficient merely because at one point they did one job and at another point they did another job.

Q If they were a construction laborer and they said that they were in the vicinity of someone who was mixing Monokote, then they would not be treated as a mixer and installer, correct? They would be put either at a site or at a space?

A I think that has to be --

Q Well could --

A I think I can't generalize. It would depend on the file.

MR. BERNICK: Your Honor, the protocol was being displayed to the witness in the court and all of a sudden, the screen went blank.

MR. FINCH: We put the screen back up. Sorry.

BY MR. FINCH:

Q Would you -- you also reviewed about 350 closed, settled mesothelioma claims, is that correct, Exponent did?
A Exponent did. They're not in my report.
Q But they did that for purposes of Dr. Florence's later analysis, correct?
A I understand that they are going to be provided to him. I don't really know very much about them.
Q Okay, obviously, the settled mesothelioma claims don't have questionnaires, correct?
A I believe that's correct.
Q Okay, so in that case what the Exponent people did is they reviewed whatever materials Grace provided to them and put the person in the appropriate A through E classification, correct?
A That's my understanding.
Q And they were supposed to use the same protocol for reviewing the settled claims files as for reviewing the questionnaires in terms of whether someone was a mixer or an installer or one of the other categories, correct?
MR. BERNICK: I'm sorry, Your Honor. At this point the witness is being asked about work that her firm didn't do and I don't believe that she is relying -- if I am mistaken about that, I'd like to know, but I think --
MR. FINCH: That's not correct.
BY MR. FINCH:
Q Dr. Anderson, your firm did review 350 settled

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mesothelioma questionnaires, correct?

A I have said they did but it's not part of my report and it's not part of my analysis.

Q Do you know to the extent to which Dr. Florence relied on that review of the settled claims?

A No.

MR. BERNICK: Object.

BY MR. FINCH:

Q If a document in the settled claims file said the worker personally mixed a Grace asbestos product, they should have been categorized as an A, correct?

MR. BERNICK: Objection to the form of the question and foundation and it goes beyond the scope of this witness's testimony and her opinions in this case and he's now seeking to get this witness to comment on work that may or may not have been done in connection with Dr. Florence's work. He should ask the question of Dr. Florence and not ask this witness to express opinions that he can then use to impeach --

THE COURT: I think what I said earlier was I would take the objection in a short summary of the basis for it. I don't need the argument, I think, unless I ask for it. Mr. Finch, I think the witness has said she doesn't know how this was done.

MR. FINCH: Your Honor, Dr. Florence also said he didn't know how this was done. It was her firm that did the

work.

THE COURT: Well, that doesn't mean you know everything that's happening in your firm. Sometimes it would be nice if you did. If you want to lay a foundation, fine, but so far --

BY MR. FINCH:

Q Okay, would you agree with me that the Exponent people reviewed whatever documents Grace gave them for reviewing the settled mesothelioma claims files?

MR. BERNICK: I object to this question. It's going beyond the scope of my examination and any other cross. He's seeking to use this witness now to express opinions that go beyond the scope of her appearance here. If he wants to call her as part of his case, he can do that but he doesn't do it on our time as --

MR. FINCH: I'm not asking her to express an opinion. I'm asking her did they do this or did they not do this.

THE COURT: You can ask her if she knows.

BY MR. FINCH:

Q Do you know if they did this?

A I said I am aware that some closed claims were reviewed. I did not include the analysis in my report. I don't know the results of those analyses.

Q And you're aware that the same people who reviewed -- the same people at Exponent who reviewed the questionnaires also

reviewed the claims -- the closed claim files?
A That's right.
Q And they were given the same protocols?
A As far as I understand it.
Q Do you have a big, fat notebook in front of you, Dr. Anderson? On direct examination you were asked about Dr. Moolgavkar's 3.2 benchmark, do you recall that?
A Yes.
Q Okay, and you said that was based on the all fibers calculation from the 1986 EPA airborne asbestos health assessment update document?
A I think that Dr. Moolgavkar has discussed this in detail in his report. I prefer to rely on him for that analysis.
Q Could you turn your book to Grace Exhibit 188? It's also ACC/FCR 298. Are you familiar with this document?
A Yes, I am.
Q It was authored by Dr. William Nicholson under contract for the EPA?
A Yes.
Q This is the same William Nicholson who published projected future mesothelioma incidence in the United States paper in 1982?
A Yes, it is.
Q Could you turn to Page 90? You understand that -- you see the table at the top there, Dr. Anderson?

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A Yes.
Q You understand that K Sub-M is the relative potency factor for various types of asbestos fiber?
A It's a potency constant.
Q It's a potency constant. And the 1.0 times ten to the minus eight is the all fibers constant, correct?
A I'm not sure that that's correct because what Dr. Nicholson did to derive his dose -- I don't think that's correct.
Q You testified on direct that you thought that the 3.2 benchmark wasn't appropriate because it included chrysitolite, correct?
A That came from Dr. Moolgavkar. My understanding is -- what you're looking at is the data table that has the summary of the four studies that Dr. Nicholson used to merge the studies to get K Sub-M for mesothelioma from these four studies and then he used the K Sub-M ratio to the K Sub-L to use the other -- these were the only studies he could qualify for the meso analysis. So then he used the ratio to the K Sub-L to go back and pick up the other studies so he used ten studies and he used one dose response curve and it was from that EPA dose response curve that I believe this three point number was derived and Dr. Moolgavkar has discussed that.
Q Okay, you don't know whether the --
A He didn't use one study out of one of the four studies

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that was used as the basis for the derivation of the single curve that Dr. Nicholson presented that's in the EPA IRIS -- the basis for the EPA IRIS file.

Q The basis for the EPA IRIS is the 1.0 times ten to the minus eight. That's within the EPA, correct?

A No.

Q That's not what the EPA used?

A No, this is a summary of the four studies that were used to derive the K Sub-M factor for EPA's dose response work and then the ratio was used -- Dr. Nicholson derived only one dose response curve for cancer for all fiber types.

Q Isn't it true that the average value of K Sub-M in the 1986 EPA paper is thus 1.0 times ten to the minus eight?

A No.

Q Would you turn to Page --

A What you're talking about -- you're trying to take the parameter, the single parameter and equate it to the dose response curve that Dr. Suresh Moolgavkar used in his analysis and that EPA has used for years for the dose response curving. What he was doing was a doubling of risk using that curve which is based on all of these studies to derive that --

Q I understand that, but --

A And so you have to ask him about what he did. It's his --

Q Okay well, I asked Dr. Moolgavkar what he did yesterday and we'll move on. Would you agree with me that this table on

page 90 shows a K Sub-M for insulation workers that is higher than 1.0 times ten to the minus eight, correct?

A I think he displays all of his K Sub-M for the four studies that he used here so --

Q And would you agree with me that 1.5 times ten to the minus eight is a higher potency factor than 1.0 times ten to the minus eight?

A This isn't a potency factor. It's a constant that's used in the equation.

Q Would you agree that it's a larger constant?

A Yes, it's a larger constant.

Q Okay, and would you -- do you agree that the insulator cohort that is referenced there with the potency constant was exposed only to chrysotile and amosite fibers and not to chrysitolite?

A I'm going to ask you to have this discussion with Dr. Moolgavkar. This is what is in his expert report. It is not in my expert report. I relied entirely on his work and I'm not going to get into his dose response work in my testimony.

Q Okay well, you have the document in front of you. Could you turn to Page 13 in the 1986 EPA document? You are familiar with this document because you have relied upon it from time to time in your own work, correct?

A Yes, and I also commissioned the work and I was director of the office when the work was done but that doesn't mean that

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I presumed to do the dose response work myself and I'm not going to redo Dr. Moolgavkar's work. And if you asked him about it yesterday, you have his answers.

Q Could you turn to Page -- the bottom -- it talks -- the study of U.S. and Canadian insulation workers by Selikoff, do you see that, 3.2 mortality associated with asbestos exposure?

A I'm not sure where you are.

Q Bottom of the document. The study of U.S. and Canadian insulation workers by Selikoff, et al.

A Yes.

Q Okay, the last sentence on the page reads, "The mortality experience of 17,800 asbestos insulation workers was studied prospectively from January 1, 1967 through December 31st, 1976. The workers were exposed primarily to chrysotile prior to 1940, to chrysotile and amosite from 1940 through 1965 and largely to chrysotile thereafter. No chrysitolite is known to have been used in the U.S. insulation materials. Selikoff, et al., 1970." You don't dispute the facts as stated in this 1986 EPA document, do you?

A This is one of ten studies that Dr. Nicholson used to derive his merge to curve for -- for his cancer dose response curve. Now as I've said, I'm not going to discuss Dr. Moolgavkar's dose response work. I think you had him here yesterday to ask him his questions. He has characterized this work in his report. He has characterized this 3.2 as

containing chrysitolite. My understanding is that the relative risk of two was calculated from this very conservative EPA dose response curve that's an upper bound. And as I said earlier, there are a host of factors to be discussed when one wants to discuss this relative risk factor and I've already listed a number of them. As to the dose response work, I am certainly deferring to Dr. Moolgavkar.

Q But you are saying that you believe the 3.2 dose response isn't applicable here?

A Yes.

Q Because you believe it contains chrysitolite. And I'm pointing out to you that the insulation potency factor is higher than the one that Dr. Moolgavkar used and it's a cohort of people that were not exposed to chrysitolite, correct?

A Dr. Nicholson did not derive his dose --

MR. BERNICK: Objection. Objection to -- I'm sorry, Dr. Anderson. I object to the form of the question. It's compound and it assumes a record with regard to Dr. Moolgavkar's testimony that's not been before this witness.

THE COURT: No, I think that's not what it assumes. I think the basic question which was based on this document which I think the witness did not answer which is whether or not she accepts the proposition that's stated in this document and that's really the appropriate question.

MR. FINCH: That's the question.

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THE COURT: Let's go back to that question.

MR. BERNICK: So what statement are we talking about?

THE COURT: The statement on Pages --

BY MR. FINCH:

Q Do you accept the proposition that the insulator cohort of the study by Selikoff from 1967 to 1976, that these workers were exposed primarily to chrysotile products to 1940, to chrysotile and amosite from 1940 through 1965 and largely to chrysotile thereafter, no chrysitolite is known to have been used in the U.S. insulation material. Do you accept that factual statement in this document, Dr. Anderson?

MR. BERNICK: Objection, lack of foundation.

THE WITNESS: I said -- you've read it correctly but Dr. Nicholson used ten studies to derive a common dose response curve.

BY MR. FINCH:

Q Dr. Nicholson didn't use --

A And I don't see what bearing that has --

Q Dr. Nicholson used the four studies in here, correct?

A But then he derived a ratio so that he could go back and pick up the other studies to complete his dose response work. Dr. Moolgavkar has discussed this in detail in his report and I don't wish -- I don't want to and I don't feel it necessary for me to try to invade his territory. But you read that statement correctly.

Q And you don't dispute that it's factually accurate?

MR. BERNICK: It's the same question that he's now put to her four different times --

THE WITNESS: You read the statement --

MR. BERNICK: -- and there's no foundation for it now and there wasn't foundation for it before.

THE COURT: Well, I don't know the foundation for it. I don't know whether she has any personal knowledge of the facts. So if she does, she can answer the question. If she has no personal knowledge of the facts, she'll state so. Dr. Anderson, do you have any personal knowledge of the facts within this report?

THE WITNESS: I do and I know that he's reading correctly one summary statement from one of the ten studies that were eventually used. And I said that the eventual dose response work involved a number of studies and that's what Dr. Moolgavkar -- that's his specialty and that's what he has discussed and it is not my specialty.

BY MR. FINCH:

Q All right, this is a graphic that -- would you put the ELMO on please?

UNIDENTIFIED SPEAKER: I'm sorry, what?

MR. FINCH: Put the ELMO on please?

BY MR. FINCH:

Q Dr. Anderson, this is one of the graphics that Mr. Bernick

showed you, is that correct?
A Yes.
Q Okay, you have various what you call benchmarks on the right-hand side here, correct?
A Yes, and they are truncated because there are ones that are higher.
Q Right, the scale is broken on the right-hand side, right?
A Right.
Q Now, in your view, someone who has been exposed -- is it correct that someone who has mesothelioma who has been exposed to cumulative fiber years of exposure to Grace asbestos of 17, that their mesothelioma could have resulted from that exposure to the Grace products?
MR. BERNICK: Objection to the form of the question.
THE WITNESS: No, that's not what this analysis shows. What I said is using these screening analysis techniques -- now, later on I looked at the information I had and I saw that just by adjusting even one parameter which was the duration from the PIQ's, you see very different patterns emerge. But I said using a very severe upper bound conservative screen, that I would recommend that the A's and the C's be further analyzed.
Q Okay, so it's at least possible that those -- that you would admit that those could have been caused by exposure to Grace asbestos?

MR. BERNICK: Objection. Calls for speculation, lack of foundation.

THE WITNESS: I was not addressing causality. This is a screening process and what I have said is there could be some reliable scientific information behind these claims and they should be looked at further.

BY MR. FINCH:

Q Okay, what about -- do you believe that -- is it your opinion that someone who is exposed to 4.5 fiber years of exposure to Grace asbestos that that person's mesothelioma could not under any circumstances be attributed to the Grace asbestos exposure?

MR. BERNICK: Objection. What person are we talking about?

THE COURT: Yes.

MR. FINCH: A hypothetical person.

MR. BERNICK: A hypothetical person under what particular circumstances?

MR. FINCH: Your Honor, may I get an answer to my question?

MR. BERNICK: Your Honor, I really --

THE COURT: No, you can get a ruling on the objection. Gentlemen, both of you have to stop this. All of you have to stop it. The ruling on the objection is that the objection is sustained. The hypothetical at this point does

not fit the facts. You may restate the question.
BY MR. FINCH:
Q Dr. Anderson, is it your view that someone who is exposed to 4.5 fiber years cumulative exposure to Grace products does not have a scientifically plausible claim that their mesothelioma was caused by the Grace exposure?
A All right, if we take this completely away from my analysis because I did not do individual analysis, I am not trying to establish causality. I was trying to establish a viable screen at a very severe upper bound conservative level from the analysis. But if you ask me if I think that someone, anyone with this kind of exposure has -- what did you say?
Q Has a mesothelioma that has a scientifically valid claim that their mesothelioma could have been caused by exposure to Grace asbestos.
MR. BERNICK: I object to the form of the question.
THE COURT: That's sustained.
THE WITNESS: Certainly not.
THE COURT: It's sustained. This witness is not doing individual causation analysis. There is no foundation on this record for that.
BY MR. FINCH:
Q Okay, so in your view someone who has 4.5 fiber years of exposure to Grace asbestos and has mesothelioma, that person cannot scientifically, validly attribute their mesothelioma to

the Grace exposure?

A I said I was willing to answer in the abstract. That's not the subject of my analysis. We're on the inference part of that curve. I presented all of these benchmarks to give a feel for just how low these values are or how high they are. I had the benchmarks and then I assembled the data. But when you're speaking of these very low levels that are vastly lower than the observed range, I can tell you what, I think, that is, that we are getting very far away from the scientific basis for making that judgment. And that's what I've said in my deposition. I'm being consistent.

But this is not -- I'm not doing individual causality analysis in this work I've done. I'm looking again --

Q So you're not doing -- you're not offering any opinion that someone with any particular exposure to Grace products, that their mesothelioma couldn't have been caused by that exposure?

MR. BERNICK: Objection to the form of the question. Are we talking about a specific individual? Are we talking about individuals within a group?

MR. FINCH: Any individual.

MR. BERNICK: I don't think that addresses the issue. Your Honor, at this point I think this witness has been here for a long time. This is argumentative --

MR. FINCH: Your Honor, this is an argumentative

objection. He should either object to form or not object to form.

THE COURT: Mr. Finch, the witness has testified repetitiously that she has been doing analyses within categories, that she is not looking at individual analyses --

MR. FINCH: Okay, let me ask three more questions.

BY MR. FINCH:

Q You have something called OSHA PEL on there as a benchmark, correct?

A Yes.

Q Is it your view that the OSHA PEL is -- that there is no excess risk of mesothelioma from exposure to asbestos at that level?

A Using public health protective risk analysis, they have done some statements, hypothetical statements of risk associated with that. They're not that high. It's what OSHA accepts. What I have said is that if we're dealing with scientific-based information, we would need to be above the observed range, about 25 fibers per milliliter year. And as we go down that curve, the competence that there is any association becomes less and this is very low on that competence curve. So I'm not establishing causality. I was providing this information for a screen and against that screen I was using an exceptionally severe set of assumptions. And so I think you are -- I don't think I can answer individual claim

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questions.

The second part of that answer has to be, for any individual claim, I think one must look at, if anyone is doing this which I am not as far as risk analysis is concerned, you'd have to look at the whole set of circumstances, how long a person has been exposed, what are the alternative exposures. And just to say if someone was exposed at 4.5 and the inference zone of a hypothetical dose response curve where the curve is uncertain in the inference zone anyway and it's uncertain by factors -- Nicholson said factor of 20 on either side -- I don't think that this OSHA number is created to establish causality. That's my view.

Q Are you aware that OSHA's preamble to the regulation states that OSHA's risk assessment also show that reducing exposures to 0.1 fiber per cc would reduce excess cancer risk to 3.4 per 1,000 workers?

A That is -- that's what I was talking about earlier when I talked about the divergence between causality and inference-based judgments. OSHA is speaking as a public health protective agency. They're charged with protecting worker health. They're using the same precautionary dose response curves I used at EPA and that's what they mean. They're reading that value off of this hypothetical default curve that I described earlier that I described as a plausible upper bound on the risk, meaning the risk could be considerably lower even

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approaching zero.

So they're saying if I go down that curve somewhat more, I would get a smaller number. But, in fact, we don't know that there's any cancer caused, or mesothelioma or any cancer, caused on this linear non threshold curve. And the desire in all of risk analysis for carcinogens now is to understand the mechanisms of action so that we can better describe the slow dose range. So these are hypothetical upper bound risk estimates and that's all they are.

Q And you didn't make any attempt to analyze causation on an individual claimant level, correct?

A Correct.

Q And you did not -- you didn't make any attempt to estimate any exposure to asbestos that these individuals would have had from sources other than Grace, correct?

A That's correct.

MR. BERNICK: Objection.

THE WITNESS: I made in my expert report only of alternative claims and then also I did make note of those claimants that I particularly made the assertion that they were exposed in shipyards.

BY MR. FINCH:

Q Okay, if the category B claimants showed cumulative asbestos exposure of 4.5 fiber years, would you have concluded that those claims in that category should be subject to further

review?

MR. BERNICK: I'm sorry, could I have the question read again?

BY MR. FINCH:

Q If the category B claimants showed that they had cumulative exposure to Grace products of 4.5 fiber years, would you have concluded that those claims in that category should be subject to further review to determine whether Grace --

MR. BERNICK: Objection.

MR. FINCH: -- could have caused their mesothelioma?

MR. BERNICK: Objection to the form of the question. Is he asking about if there was one person in the category or whether the mean dose in that category was 4.5?

BY MR. FINCH:

Q If the mean dose in that category was 4.5 instead of 2.1.

A It would depend on the product, the product mix and a view of all the benchmarks. I wouldn't do it necessarily just because -- that's if you're exposed to the OSHA standard for 45 years and that does not mean that OSHA has set a standard, that they think, in an occupational setting would cause mesothelioma, nor do I. But I think before that judgment could be made, one would have to look at the entire nature of exposure category, what the product is that one is being exposed to and make judgments against all of the benchmarks. But probably not.

MR. BERNICK: Your Honor, at this point I would note that Mr. Finch has now doubled his 15 minutes and their estimate of two and a half hours is wrong by 35 minutes and they have now doubled the time that I spent on direct examination and I'm concerned about finishing today.

MR. FINCH: Your Honor, I don't have any more questions.

THE COURT: Redirect?

MR. BERNICK: Let's do a couple of things here this afternoon quickly. Could I have the ELMO on please for just a moment? Thank you very much.

REDIRECT EXAMINATION

BY MR. BERNICK:

Q Referring you to that same table which is contained in GX-188 that had the K-M factors that Mr. Finch talked about, he asked you a lot about this one here which is insulation workers which is 1.5 times ten to the minus eight, do you recall that?

A Yes.

Q And if we take a look at the insulation workers and in fact the description that Mr. Finch directed you to, it was at Section 3.2, and the continuing on or the continuing language on Page 14 was, "These workers were exposed primarily to chrysotile prior to 1940, to chrysotile and amosite or from 1940 to 1965, and largely to chrysotile thereafter." You see where it refers to exposure to chrysotile and amosite for 25